

Customer No.: 31561
Application No.: 10/709,036
Docket No.: 12468-US-PA

REMARKS

Present Status of the Application

The Office Action rejects claims 1-7 under 35 U.S.C. 103(a) as being unpatentable over Naumov et al. (U. S. Patent 6,875,950; hereinafter Naumov) in view of Girard et al. (U. S. Patent 6,146,813; hereinafter Girard). In addition, claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naumov in view of Girard and further in view of Manginell et al. (U. S. patent 6,171,378; hereinafter Manginell). Claims 1-7 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Claim Rejections under 35 USC 103

The Office Action rejects claims 1- 7 under 35 U.S.C. 103(a) as being unpatentable over Naumov in view of Girard. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naumov in view of Girard and further in view of Manginell. The Office Action also in "**Response to Arguments**" states that "*the instant apparatus claims are not limited by the function of the apparatus in a process of annealing silicon into polysilicon*". Applicants respectfully traverse the rejections for at least the reasons set forth below.

1. In response to "**Response to Arguments**" of the Office Action, Applicants have amended claims to clearly recite the application in *a process of annealing silicon into polysilicon*. It is believed that the original claims have clearly directed to the annealing process on the silicon into polysilicon. However, Applicants have amended claims to make it clear. It should be noted

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that the amendments do not cause estoppel in considering Doctrine of Equivalent.

2. The present invention is directed to a laser annealing on the amorphous silicon film into polysilicon film. The resistance-measurement module is used to measure a sheet resistance of the polysilicon thin film for obtaining a sheet resistance value, so that the host circuit module can adjust and optimize the laser energy density. In other words, the laser energy is properly varying with the current resistance of the polysilicon under annealing.

3. In Re Naumov, clearly, the laser is used to trim the untrimmed elements on the panel 540(FIG. 5; col. 14, lines 57-63). Further, Naumov does not vary the power of laser once the power is set (col. 15, lines 49-63). Therefore, Naumov does not disclose the *resistance-measurement module* of the present invention to measure the resistance of the annealed silicon, so as to proper adjust the laser energy.

Alternatively, the Naumov is nonanalogous to the present invention about laser annealing with adjusting laser energy density based on the measured resistance on the polysilicon film.

4. In re Girard, again, the laser is used to carbonization to form the shunt. The laser is operated just below the ablation threshold (col. 15, lines 1-14 *in which the laser energy of Girard is at a fixed energy density.* Even though the resistance is measured in Girard (col. 15, lines 12-14), this is the different mechanism from the present invention when considering the present invention as a whole. In Girard, *the laser energy density is not adjusted according to the measured resistance.*

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As discussed in previous response, actually, Girard is to form the shunt structure. The shunt resistance is related to length of shunt and distance between conductors by " $R = \rho (L/WT)$ " (col. 11, lines 18-31). Therefore, it is understood that the resistance measurement is for checking whether or not the shunt resistance is achieved *but not for adjusting the laser energy density on the polysilicon* as recited in the present invention. Here, the sheet resist for the polysilicon film, considered in the invention, is varying with the degree being annealed from amorphous silicon into polysilicon.

Therefore, Girard fails to disclose the measurement on the sheet resistance of the polysilicon, so as to adjust the annealing laser energy.

5. Girard is nonanalogous to the present invention about laser annealing on the amorphous silicon into polysilicon. In other words, Naumov and Girard are nonanalogous to the present invention. The combination of Naumov with Girard is not proper, either.

6. With respect to claims 5 and 6, depending on claim 1, Manginell is further cited in combination. However, Manginell discloses the "chemical preconcentrator". In Fig. 10, the sample is fed and the preconcentrated sample is exported for analysis. This does not supply the missing features in Naumov and Girard with respect to the independent claim 1 and therefore in claims 5 and 6. Manginell is also nonanalogous to the present invention.

For at least the foregoing reasons, Applicants respectfully submit that independent claim 1

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patently defines over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2-7 patently define over the prior art references as well.

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CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1-7 of the invention patentably define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Date :

Jan. 5, 2005

Respectfully submitted,

Belinda Lee

Belinda Lee

Registration No.: 46,863

Jianq Chyun Intellectual Property Office
7th Floor-1, No. 100
Roosevelt Road, Section 2
Taipei, 100
Taiwan
Tel: 011-886-2-2369-2800
Fax: 011-886-2-2369-7233
Email: belinda@jicpgroup.com.tw
Usa@jicpgroup.com.tw